

DOCUMENT RESUME

ED 402 109

PS 024 925

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TITLE Siblings as Teachers: Activity Settings in the Home of a Puerto Rican Kindergartner.
SPONS AGENCY Cleveland State Univ., OH. Urban Child Research Center.
PUB DATE Sep 96
NOTE 20p.; Paper presented at the Ethnography and Education Conference (Oxford, England, United Kingdom, September 9-10, 1996).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Active Learning; Definitions; Family Environment; Hispanic Americans; Kindergarten; Kindergarten Children; Parent Child Relationship; *Parents as Teachers; Primary Education; Puerto Ricans; *Sibling Relationship; Spanish Speaking
IDENTIFIERS *Activity Settings; Hispanic American Students; Play Learning; Zone of Proximal Development

ABSTRACT

This study explored the teaching and learning of school-related knowledge and skills in the home of a Spanish-dominant Puerto Rican kindergartner. The teachers, in this case, were the child's older siblings. The study was part of a larger exploration of language use in the classroom versus the home during activities defined by adults as lessons. Several hours of observation and audiotape recordings were conducted in the subject's home and were analyzed within the context of activity settings. (Activity settings are mediating contexts between culture and individual lives; they are goal-directed and collaborative interactions in which teaching and learning occur, and are defined by their components: personnel, cultural values, tasks, immediate motives, and scripts.) Interactions in the activity settings discovered during this study were analyzed on three levels. At the level of individual development, the subject demonstrated an active role in jointly constructing a zone of proximal development, including the use of private speech. At the interpersonal level, the data suggested that the activities of older siblings, together with those of parents, formed a coordinated system of caretaking and teaching as described in the cross-cultural literature. Whereas parents engaged in more formal teaching rather than play, older siblings provided a range of informal opportunities for learning that were embedded in play and other meaningful interactions. Third, at the cultural level, use of several different scripts, characteristic of different cultures, was apparent within the activity settings; older siblings often embodied a different cultural type of teaching than did parents. (Contains 29 references.) (EV)

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Siblings as Teachers: Activity Settings
in the Home of a Puerto Rican Kindergartner

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Paper presented at the Ethnography and Education Conference, Department of
Educational Studies, Oxford University, Oxford, England, September 9-10, 1996.

This work was supported in part by Faculty Associate Program Funds from the
Urban Child Research Center, College of Urban Affairs, Cleveland State
University, Cleveland, OH.

Yo encuentro que lo más importante es el que la familia esté unida y se muestre amor. Y allí es donde entonces el niño, pues, puede aprender más. Porque a veces ¿de qué le vale a uno enseñarle a uno una matemática o enseñarle a escribir si en la familia no está unida ni hay amor? Ahora cuando toda la familia trabaja junto con todos los hijos yo encuentro que eso ayuda más a los niños.

[I find that the most important thing is that the family is together and shows each other love. And there is where then the child, well, can learn most. Because sometimes what good does it do to teach someone math or teach them to write if the family is not together and there isn't love? Now when the whole family works together with all the children I find that that helps the children most.]

Señora Maldonado, Nelson's mother

Introduction

The purpose of this paper is to explore the teaching and learning of school-related knowledge and skills in the home of a Spanish dominant Puerto Rican kindergartner, Nelson Maldonado¹. The teachers, in this case, are Nelson's older siblings and they do their teaching within the context articulated by Nelson's mother above. From her perspective, teaching and learning find their meaning in the closeness of family relationships.

This work is part of a broader study (Volk, in press) that explored continuities and discontinuities between the homes of Nelson and Mónica, another kindergartner, and their bilingual classroom. The focus there was on the language use of the two children, their teacher, and parents in activity settings the adults defined as lessons. The analysis revealed that the parents prepared their children to succeed in school by teaching them school-related knowledge and skills such as identifying numbers, letters, colors, and shapes. Consistent with this goal, they used the recitation script typically used by teachers in school lessons. This script is characterized by strings of known information questions used to assess children's knowledge (e.g., What number comes after seven?) and by the initiation-response-evaluation (IRE) sequence in which the teacher asks a question, the child responds, and the teacher makes an evaluative comment (Tharp & Gallimore, 1988). In contrast to lessons in school which were dominated by the teacher, lessons in the homes were co-constructed by the parents and children. Though these lessons were infrequent, the findings suggest that the parents drew on their knowledge of schooling and their cultural heritage to create activity settings for teaching and learning in their homes as well as to create continuity with the school.

As I observed in the homes, I realized that the older siblings played with the kindergartners frequently and that school content was often introduced into these interactions by both the older and younger siblings. Sometimes the focus was on numbers and letters, sometimes on more complex skills such as classifying and strategic thinking, just as it was in school. These sibling interactions appeared to support and complement the parents' formal lessons as well as the informal teaching in which they often engaged their children. After Mónica's family moved back to Puerto Rico, I planned a case study of the interactions of Nelson with his older siblings that involved both kinds of school-related content.

Theoretical Framework

Neo-Vygotskians (Moll, 1990; Rogoff, 1990; Tharp & Gallimore, 1988) argue that children's development and learning must be understood as embedded in a socio-cultural process. Children experience culturally appropriate patterns of thinking and communicating in interactions with more competent members of their culture, be they adults, siblings, or peers (Rogoff, 1990). As children participate in the interactions, they appropriate these patterns, acquiring the means to be competent members of their cultures themselves.

The concept of activity setting provides one way of studying the relationship of culture to children's lives. Activity settings are mediating contexts between culture and individual lives; they are goal-directed and collaborative interactions in which teaching and learning occur. Composed of the elements of the environment as well as the social and cognitive aspects of interactions, activity settings are defined by their components: personnel, cultural values, tasks, immediate motives, and scripts (Gallimore & Goldenberg, 1993; Tharp & Gallimore, 1988).

Within activity settings, people create what Vygotsky called a zone of proximal development (zpd), a range of emerging behaviors that are bounded at one end by "independent performance, what the child knows and can do alone" and at the other by "assisted performance, the maximum [level] the child can reach with help" (Bodrova & Leong, 1996, p.35). Within the zone are levels of assisted performance in which the child will need some help. Since children are always changing and learning, emerging behaviors change along with the kind of assistance needed (Berk & Winsler, 1995; Bodrova & Leong, 1996).

Within the zpd, the expert scaffolds the learning of the novice, providing support that is sensitive to the learner's needs while the novice actively responds and initiates more learning (Bodrova & Leong, 1996). For the novice, what occurs is not merely an internal replication of the external process of interaction but an appropriation or active transformation of that process, in which the child makes it his or her own to use in the future (Rogoff, 1990). In order for the novice to move to a higher level of functioning, the expert transfers responsibility for the task to the novice and the novice takes on the responsibility (Azmitia & Hesser, 1993; Ellis & Rogoff, 1986). Thus, assisted performance is the result of mutual negotiation or co-construction by the expert and the novice within the context of their joint activity (Moll & Whitmore, 1993).

In the study described here, I investigated activity settings in Nelson's home by describing personnel, cultural values, tasks, and immediate motives in relation to the scripts used. Scripts were understood as "stable patterns of behavior" that are of cultural and situational significance to the personnel involved (Tharp & Gallimore, 1988, p. 7).

Review of Related Research

Most of the research on children's socialization has been concerned with the mother-child dyad (Watson-Gegeo & Gegeo, 1989; Weisner & Gallimore, 1977). Nonetheless, much cross-cultural research has shown that older siblings often play an important role in the care and education of young children (Cicirelli, 1995; Weisner, 1989; Weisner & Gallimore, 1977). Weisner and Gallimore, in their landmark investigation of sibling caretaking across cultures (1977), assert that "nonparental caretaking is either the norm or a significant form of caretaking in most societies" (p. 169). Older siblings are described as

"cultural and linguistic brokers" (Watson-Gegeo & Gegeo, 1989, p. 70), functioning as caretakers along with parents, not instead of them. Parents and older siblings play complementary roles in dynamic relation to each other (Bryant & Litman, 1987; Watson-Gegeo & Gegeo, 1989). These more expert members of a culture co-construct social knowledge along with the novice members, often using distinctive interactive styles (Farver, 1993; Weisner, 1989).

Older siblings accomplish a variety of tasks vis-a-vis younger ones within and across societies. In many, they assist parents in caregiving (Weisner & Gallimore, 1977). In others, they participate in the affective, social, or cognitive development of their younger siblings, even though they may not have direct responsibility for care (Cicirelli, 1995; Dunn, 1985). As younger children reach middle childhood, homework is often the subject of their joint activity (Bryant & Litman, 1987; Cooper & St. John, 1990).

Overall, the literature argues against generalizations, describing variability in sibling interactions between cultures and within them (Cooper & St. John, 1990; Weisner, 1989). For example, in Native Hawaiian culture, despite widely-held beliefs supporting the autonomy of children's peer and sibling groups, variations in activity settings occur depending on who is involved, what they are doing, and what they want to accomplish (Weisner, 1989; Weisner, Gallimore, & Jordan, 1993). These factors together constitute "the instantiation of culture at the individual level" (Gallimore & Goldenberg, 1993, p. 331). To avoid stereotyping, research must unpack the culture in this way, investigating how the culture informs everyday lives and how families adapt to their particular situations (Weisner et al., 1993).

Methodology

For the data collection and analysis, ethnographic techniques used for the study of cultural goals and practices were combined with ethnomethodological techniques used for the study of discourse patterns in individual interactions (Gregory, 1993). By describing values and motives in relation to the participants and what they did, the analysis kept three levels in focus: the individual child's development, the interpersonal context, and the cultural process (Rogoff, Mistry, Goncu, & Mosier, 1993). The use of the mediating concept of activity setting facilitated movement between the levels of analysis (Weisner et al., 1993).

The data collection for the broader study of home-school continuities and discontinuities was conducted primarily during one school year. Kindergartners were selected for study since they were experiencing the transition from learning at home to formal schooling. I observed in the school and in both homes throughout the fall and, between January and April, conducted audiotapings in both settings of the adults and children as well as their other speech partners. There were six tapings of between one and three hours in each home for a total of about 21 hours. I also conducted a semi-structured interview with the parents and held many conversations with family members.

Two years later, I returned to Nelson's home to learn more about sibling interactions. I interviewed Señora (Sra.) Maldonado along with the children and conducted additional observations. I also taped the family's Bible study sessions for about 3 hours. Total observation time in the two homes during both phases of data collection was almost 50 hours.

Recordings were transcribed and translated by a native Spanish speaker who is Puerto Rican and fluent in English. In the transcripts I identified two types of overlapping activity settings: sibling lessons that involved the

direct instruction of school content such as the naming or writing of numbers and letters; and sibling guidance that involved indirect instruction in more complex skills such as creating patterns or using strategies to complete a jigsaw puzzle. The sibling lessons were identified by family members when asked how they supported Nelson's learning in school and by their use of the recitation script. Instances of sibling guidance were called play by the family but were identified as relevant to the kindergarten curriculum by the researcher and the teacher.

Within the activity settings, language use and interaction patterns were identified and compared with those in the adults' lessons analyzed in the broader study and with others described in the literature. Rather than just describe the language and behaviors of individuals, I investigated the ways that Nelson and his siblings talked and acted with each other, embedded in the context of their joint activity and in relation to their underlying goals and motives. Older and younger siblings were viewed as active participants; the co-construction of scripts within zps and the transfer of responsibility for the activity from the older siblings to Nelson were of special interest (Azmitia & Hesser, 1993; Ellis & Rogoff, 1986; Rogoff et al., 1993).

Activity Settings

This section begins with a brief description of the broader community and then presents each component of the activity settings: personnel, cultural values, tasks, and immediate motives in relation to scripts.

The Community

The study took place in a large city in a midwestern state that has had a thriving Puerto Rican community since the late 1940s. In 1990, there were 22,330 Latinos living in the city, representing about 4.4% of the population. The vast majority were Puerto Rican. Of those Latinos 18 years and older, only 20.6% had more than a high school education. That same year, there were 4300 Latino children in the city's schools, representing about 6% of all the students. Seventy-three percent lived in families below the poverty level (de Acosta, 1993).

Personnel

Nelson--5.9 years old in September--attended a bilingual kindergarten. Like all the children in the class, he was eligible for the free lunch provided for low income families. In January, when the taping began, Nelson was Spanish dominant, an emergent bilingual who used Spanish more competently than English. At home, Nelson spoke Spanish with his mother and father. His mother spoke little English; his father used English frequently outside the home. The older siblings spoke English fluently and Nelson frequently used English words and phrases with them.

Nelson's family had come to the city less than a year before the study after living in New York City and Puerto Rico. Nelson's father worked in a small, local factory; his mother was a homemaker. The parents had attended school in Puerto Rico through the tenth grade. The other family members were either in school, had graduated from high school and were working, or were raising a child at home.

In addition to Nelson and his parents, the family consisted of Robert and Luis, 7 and 17 years old, and Yvette, 14 years old. Nelson's 19 year old brother, Manuel, and his wife, Nati, lived nearby as did his uncle, Joey, and his wife, Zulma, both in their early 20s. For the purposes of this study, Manuel, Nati, Joey, and Zulma as well as Luis and Yvette were all considered "older siblings", members of Nelson's extended family. These four spent many hours interacting with Nelson, in his home and in their's.

Robert was only a year and a half older than Nelson and was not considered an "older sibling". Though the boys usually played together, the closeness in ages meant that they often competed and argued. Though Robert occasionally tried to teach Nelson something about school or a game, their adversarial relationship was different than the nurturing relationship between Nelson and the "older siblings".

Cultural Values

Like other poor and minority parents described in the literature (Vasquez, Pease-Alvarez, & Shannon, 1994; Diaz Soto, 1988), Nelson's parents said that they understood the importance of education in their children's lives. They asserted that parents were responsible for teaching their children the basics and proudly described how they had taught Nelson to write his name, identify colors, numbers, and letters, and speak some English. They said they expected their children to do well because they had provided this academic preparation and because they had taught their children to respect their teachers. In fact, Nelson did do well in the years after kindergarten. In first grade, he received an award as the best student in his class.

During one of the interviews, I asked Nelson's mother to describe the most important thing they could do to help their children in school. Her answer, quoted at the beginning of this article, highlighted the family's approach to learning. Her perspective reflects the common Latino understanding of "educación" and of "bien educado", a highly-valued personal characteristic. While the terms literally mean "education" and "well educated", they have both academic and moral aspects. Schooling by itself is not enough; a person who is "bien educado" is well-brought-up and knows how to act respectfully and correctly with others (Reese, Balzano, Gallimore, & Goldenberg, 1995).

The older siblings also spoke about the closeness of their family and how they helped each other with school work. Yvette said that it had always been that way; the older brothers helped her and now she was helping Nelson and Robert. Luis described "the teaching and the enjoyment and being together".

When I asked Sra. Maldonado to explain why the family was so close, she pointed to their religion. As Jehovah's Witnesses, she believed that they had learned to teach each other and to care for each other. They all played a role in keeping the family close and in preparing each other to do well in school and life. To illustrate, she explained that the family studied the Bible together almost every day, taking turns reading and explaining parts to the younger ones if they could not read or did not understand.

Tasks

The tapings were conducted on weekday afternoons and on Saturdays. During these times, Nelson and Robert ate, played with action figures and studied their baseball cards, threw a football, worked on a jigsaw puzzle with Luis, and argued about Chinese checkers. Sometimes Nelson played alone or

looked at books. Nelson and Yvette and then Robert played Connect Four, a checkers-type game. Everyone watched television and all the children worked on homework. Nati, Zulma, Manuel, and Sra. Maldonado came in to the boys' room to talk or bring snacks.

Sra. Maldonado did housework, cooked, talked with family and friends, and watched television. She checked to make sure the children did their homework and refereed their arguments. Nelson helped her with chores such as putting away groceries. During one observation, Sra. Maldonado read Nelson a story in Spanish, asking him to repeat each phrase. Then, using a Spanish primer, she helped him read the syllables and simple words. When Nelson's father was home, he joined in the talk, watched television, or made household repairs. On one occasion, he helped Robert with homework as they sat on the floor together.

The extended family often congregated around the kitchen table talking and eating. Sometimes the children did their homework or colored. Once Nelson wrote his name and numbers, asking for help as he worked. One day his family urged him to perform some school songs; another time they teased him about milking a cow on a school field trip.

These parents, like others described in the literature (Gallimore and Goldenberg, 1993; Gregory, 1994; Rogoff, 1990), identified the direct instruction of academic content by an adult as "teaching" and "lessons" and distinguished these from play. Though they did occasionally play board games with their children, in general, they did not play with them, believing that children should play on their own or with other children.

Immediate motives

When asked about their motives when teaching, Sr. Maldonado evoked parents' responsibility to prepare their children for school. Yvette and Luis said that they had always helped each other. Robert explained that he often asked his older siblings for help instead of his mother because of her limited knowledge of math and limited command of English. Sra. Maldonado explained that the older siblings helped the younger ones when she was too busy.

It could be argued that the family members were also motivated to teach Nelson during the tapings because of the presence of the observer and the tape recorders. While it is possible that these artifacts of the research process did elicit more frequent teaching than was typical, it is clear from the interviews and observations that the parents and older siblings knew how to teach the younger ones and did so frequently.

Less lofty motives were also apparent. When Luis worked on a puzzle with Nelson and when Yvette played Connect Four with him, they worked hard to teach him needed skills and information while also trying to finish the puzzle or win the game. Nelson was just learning how to do a puzzle and was eager to be taught and to put together pieces faster than his brothers. He knew how to play Connect Four and was eager to beat Yvette and invent his own variations.

Scripts in Activity Settings

Sra. Maldonado's perspective on learning in the family context provided two essential clues to the analysis of the scripts used by Nelson and his older siblings. First, sibling interactions were not discrete events but were embedded in the on-going flow of family talk and activity. Personnel and tasks continually shifted, as people moved in and out of rooms, playing, arguing, directing, helping out, and just sitting around and talking. Immediate motives

might change or conflict with cultural values or with the motives of another. This multi-layered, multi-person quality was also apparent in the scripts which mixed different languages and styles of speaking and interacting.

Second, the two inter-related values implicit in the concept of educación--preparation for school and family relationships--undergirded the two types of activity settings, sibling lessons and sibling guidance. Though both values were operative at all times, preparation for school seemed primary in the lessons and family relationships seemed primary in the settings characterized by guidance. The scripts used reflected these values.

Table 1 displays the activity settings identified in the transcripts, noting tasks, personnel, school content, and duration. Following are descriptions of the scripts that were embedded in the activity settings.

Insert Table 1 about here

Scripts in Sibling Lessons

Example 1, part of activity setting #3, begins when Nelson and Yvette have been playing Connect Four for awhile. Nelson invents a game in which he distributes the red and black pieces equally to each of them (line 1). Yvette turns the game into a lesson about numbers. The double slashes indicate overlapping speech.

Example 1

- 1 Nelson: (to self) Una para ti. Para mi. [One for you. For me.]
- 2 Yvette: ¿Cuántas negras tú tienes? [How many blacks do you have?]
- 3 Nelson: Tres. ¿Y tú? [Three. And you?]
- 4 Yvette: Tres. [Three.]
- 5 Nelson: (to self) Para ti. //Para mi.// [For you. For me.]
- 6 Yvette: //Para mi.// [For me.]
- 7 Nelson: (to self) Para ti. Para mi. Para ti. (to Yvette) ¿Cuántas tú
- 8 cogiste? [For you. For me. For you. For. How many did you take?]
- 9 Yvette: Mm. ¿Cuántas negras tú tienes? [Mm. How many blacks do you have?]
- 10 Nelson: Uno dos tres cuatro. [One two three four.]
- 11 Yvette: Yo tengo cuatro también. Coge una roja. ¿Cuántas rojas tú tienes?
- 12 [I have four too. Take a red one. How many reds do you have?]
- 13 Nelson: Uno dos tres cuatro. [One two three four.]
- 14 Yvette: Uno dos tres cuatro. Coge una roja. Uno dos tres //cuatro//
- 15 cinco. [One two three four. Take a red one. One two three four
- 16 five.]
- 17 Nelson: (to self) //Cuatro.// [Four.]
- 18 Yvette: Cinco. [Five.]
- 19 Nelson: (to self) Cinco. [Five.]
- 20 Yvette: Una para ti. Para mi. //Una para ti. Ahora tu vas repartiendo.//
- 21 [One for you. For me. One for you. Now you give them out.]
- 22 Nelson: //No yo las reparto. Yo las reparto.// ¿Cuántas negras tú tienes?
- 23 [No I give them out. I give them out. How many blacks do you
- 24 have?]
- 25 Yvette: Una //dos tres cuatro cinco seis.// [One two three four five
- 26 six.]

- 27 Nelson: //Yo tengo una dos// tres cuatro cinco seis. [I have one two
28 three four five six.]
29 Yvette: Yo tengo seis también. [I have six too.]
- (they continue to give out pieces and count them)
- 30 Nelson: (to self) Para ti. Para mi. Para ti. Para mi. ¿Y estas dos? [For
31 you. For me. For you. For me. And these two?]
32 Yvette: ¿Cuántas negras tú tienes? Ponlas aquí. ¿Cuántas negras tú
33 tienes? [How many black do you have? Put them here. How many
34 blacks do you have?]
35 Nelson: Uno dos tres. Tengo tres allí. Cuatro cinco. Cinco seis siete
36 ocho nueve diez. [One two three. I have three there. Four five.
37 Five six seven eight nine ten.]
38 Yvette: Dos tres cuatro cinco seis siete ocho nueve diez. ¿Cuántas rojas
39 tú //tienes?// [Two three four five six seven eight nine ten. How
40 many reds do you have?]
41 Nelson: //Diez.// [Ten.]
42 Yvette: O pues //coge una.// [Oh then take one.]
43 Nelson: //Diez.// [Ten.]
44 Yvette: ¿Cuántas rojas tú tienes? [How many reds do you have?]
45 Nelson: Uno dos tres cuatro cinco seis siete ocho nueve. [One two three
46 four five six seven eight nine.]
47 Yvette: Diez. Yo cojo //diez.// [Ten. I take ten.]
48 Nelson: //Nueve// y diez. [Nine and ten.]
49 Yvette: ¿Pues? [Then?]
50 Nelson: (to self) Nueve y diez. [Nine and ten.]
51 Yvette: Una para ti y una para mi. [One for you and one for me.]
52 Nelson: Ok. Nueve diez once. [Ok. Nine ten eleven.]
53 Yvette: Y yo ten-tú tienes //once rojas y yo once negras.// [And I ha-you
54 have eleven reds and I have eleven blacks.]
55 Nelson: //Ok vamos a hacer un juego.// Yo empiezo. [Ok let's play a game.
56 I start.]

Several patterns are evident here. The first involves Yvette's use of known information questions, a key aspect of the recitation script. She uses them to assess Nelson's knowledge and also as indirect requests for action that tell Nelson to count. When Yvette asks "¿Cuántas negras tú tienes?"/"How many blacks do you have?" in line 2, she seems to establish her role as a teacher and this interaction as a lesson. In line 11, she asks him to take one more, count how many he has or add them, take one more, count... repeating these questions until the end of the example. Her questioning is identical to that used in lessons by both the parents and by Nelson's teacher.

In contrast to the adults, Yvette's use of the IRE sequence is inconsistent. At times, as in line 14, she uses repetition for the evaluation turn to confirm the accuracy of Nelson's counting just as the adults do; at other times, as in lines 11 and 20, she does not use that third part of the sequence and she and Nelson alternate turns like peers.

Second, Yvette appears sensitive to Nelson's level of independent performance and the kind of scaffolding he needs within the zpd. She knows he is learning to count and provides support with two strategies: by counting with him in their overlapping turns (lines 14-18, 25-28, 47, 48) and by repeating his turns (lines 14, 38). With her final "¿Pues?"/"Then?" in line

49, Yvette urges Nelson to add one more to ten by himself. Then, in line 51, she provides assistance by giving them each one more piece. This concrete action provides the scaffolding most young children find useful in order to extend their counting and that Nelson needs to perform at a level beyond that of his independent functioning (line 52). These techniques illustrate assisted performance and the transfer of responsibility for the task.

Third, Nelson is also an active participant here. He takes control of distributing the pieces just as Yvette offers them back to him (lines 20-24), asks Yvette how many pieces she has (lines 7-8, 22-24), and completes the final step of adding one to ten with no verbal assistance (line 52). As Yvette counts, Nelson repeats the numbers (lines 17, 19, 27, 41, 43, 48, 50, 52) and works with her at counting as shown above. At times he does this aloud and at other times he appears to be using private speech as a way of guiding his thinking and completing the task as it becomes progressively harder (lines 19, 50). The strategies that Nelson uses, repetition, private speech, and overlapping turns, provide evidence of his active appropriation of the counting process. In his final turn, Nelson asserts that they will return to the game he was inventing, not continue with Yvette's lesson.

Example 2, part of activity setting #9, is also a sibling lesson, though it is characterized by a mix of personnel, tasks, motives, and scripts. It begins as several family members sit around the kitchen table. Nelson works with a pencil and paper. Zulma and Yvette tease him to try to get him to say Zulma's address (lines 1-3). The adults and older siblings often used teasing with Nelson. Here it seems to function like the assessment questions, requiring Nelson to share some known information. When this does not work, Zulma tries a more direct question in lines 5 and 6, "¿Cuál es el número?"/"What's the number?". Nelson, ignoring the question, indicates that he needs help with spelling (lines 7-8), initiating a sequence of assistance by both Zulma and Yvette.

After the others have talked for awhile, Nelson responds to Zulma's earlier question by asking for help with his address (lines 19-20). Zulma asks him to read what he has written (line 22). Nelson continues to ask Yvette for help writing the numbers as Sra. Maldonado and Zulma talk (lines 28-46). His father helps too in lines 23 and 40.

Example 2

- 1 Zulma: El no sabe cual es mi dirección. ...Nelson no sabe cual es la
- 2 dirección de él, ¿verdad Nelson? [He doesn't know my address.
- 3 ...Nelson doesn't know his address, right Nelson?]
- 4 Nelson: Yo la sé. [I know it.]

(mother, father, Yvette, and Zulma talk about Nelson and to him about address, he is silent)

- 5 Zulma: ¿Cuál es el número? ¿Cuál es el número de aquí? [What's the
- 6 number? What's the number here?]
- 7 Nelson: (writes P) Después de esta ¿cuál viene? ¿La A? [After this
- 8 one which one comes? The A?]
- 9 Yvette: ¿Qué tú vas a escribir allí? [What are you going to write there?]
- 10 Nelson: Papá. [Father.]
- 11 Yvette: A.
- 12 Nelson: (writes)

- 13 Zulma: Mjum. //¿Después?// [Mhum. Next?]
 14 Yvette: //P.// Pero la chiquita. A. [P. But the little one. A.]
 15 Nelson: (writes)
 16 Yvette: Y más nada. [And nothing else.]
 17 Zulma: ¿Qué dice allí? [What does it say there?]
 18 Nelson: Papá. [Father.]

(mother, father talk to each other; Zulma talks to father and Yvette about house Nelson is drawing)

- 19 Nelson: Después de esta ¿cuál viene? West? [After this one which one
 20 comes next? West?]
 21 Yvette: West sesentisiete. [West sixty-seven.]

(mother and father talk; Zulma, Yvette, and Nelson talk; Nelson writes)

- 22 Zulma: (to Nelson) ¿Qué es eso? ¿Qué es eso? [What's that? What's that?]
 23 Sr M: Dirección de acá. [Address here.]
 24 Yvette: (to Nelson) Na-a. [Na-ah.]
 25 Nelson: ¿Mm? [Mm?]
 26 Yvette: Seis y un siete. [Six and a seven.]
 27 Nelson: ¿Así es? [Like this?]
 28 Sra. M: ¿Tú vas a predicar viernes Zulma? [Are you going to preach Friday
 29 Zulma?]
 30 Nelson: ¿Aa? [Huh?]
 31 Yvette: //Así.// [Like this.]
 32 Zulma: //Tengo que predicar.// [I have to preach.]
 33 Nelson: //No. ¿Así?// [No. Like this?]
 34 Sra M: //¿Desde qué hora?// [At what time?]
 35 Yvette: //No al revés. Así.// [No the other way. Like this.]
 36 Zulma: //Voy a tratar de empezar// temprano. [I'm going to try to start
 37 early.]
 38 Sra M: ¿Con //quién vas?// [Who are you going with?]
 39 Zulma: //No tengo (unclear).// [I have no ().]
 40 Sr M: (to Nelson) //Aquí no. Aquí.// [Not here. Here.]
 41 Sra M: //Pero con// que este. ¿Tú vas en tu carro o no? ¿No? [But with
 42 that this. Are you going in your car or not? No?]
 43 Zulma: No creo. [I don't think so.]
 44 Yvette: Pero hazlo acá. [But do it here.]
 45 Nelson: //(unclear)//
 46 Zulma: //(unclear)//
 47 Yvette: Déjalo. Está bien. [Leave it. It's fine.]

(Zulma and mother talk; Nelson writes)

- 48 Yvette: No. Escríbelo otra vez acá. [No. Write it again here.]

This lesson is similar in some ways to Example 1, different in others. First, Zulma and Yvette share the teaching role though only Zulma uses the recitation script, asking a series of known information questions beginning with "¿Cuál es el número?"/"What's the number?" (lines 5-6, 13, 17). She uses the evaluation turn in the IRE sequence, though only once to confirm Nelson's answer with "Mjum"/ "Mhum" in line 13. In contrast, Yvette asks a question to

which she does not know the answer to find out what Nelson is writing (line 9) and then tells Nelson what letters to write (lines 11, 14, 16) and how to write them (lines 26, 31, 35, 44, 47, 48).

Second, the use of scaffolding is minimal. As Nelson tries to write "papá", both Yvette and Zulma provide questions and information ("¿Después?"/"Next?" and "Pero la chiquita."/"But the small one.") in lines 13 and 14 that make it possible for him to spell the word, performing slightly beyond his level of independent performance with their assistance. As noted above, Yvette supplies him with the letters, providing no scaffolding and doing herself what he cannot do on his own. There is little assisted performance or transfer of responsibility from Yvette and Zulma to Nelson. The zpd is extended only slightly.

Finally, Nelson continues to play an active role. He practices what he knows and wants to practice, asking many questions requesting help and clarification (lines 7-8, 19-20, 25, 27, 33). The fact that he is working primarily at his level of independent performance means he has no need for private speech or repetition to direct his own efforts. The overlapping talk seems related to the many simultaneous conversations.

Scripts for Sibling Guidance

In Example 3, excerpts of activity setting #2, Nelson and Robert work with Luis on a jigsaw puzzle. Robert has some experience with puzzles and Nelson very little. As a consequence, Luis plays the role of guide, sometimes telling them what to do but, more often, providing strategies for them to use. Their collaborative work reflects the family's value of close relationships and mutual assistance.

Example 3

- 1 Luis: Todas las azules busca el cielo el cielo el cielo el cielo el
- 2 cielo primero los azules. [All the blue ones look for the sky the
- 3 sky the sky the sky the sky first the blue ones.]
- 4 Nelson: This one.
- 5 Luis: Las azules. [The blue ones.]
- 6 Nelson: This one.
- 7 Luis: Pues sácalas aquí. [Then get them out of here.]
- 8 Nelson: (to self) Azules... Mira azul. Azul. [Blue ones... Look blue.
- 9 Blue.]
- 10 Luis: Mjum. [Mhum.]
- 11 Nelson: (to self) Azul. [Blue.]
- 12 Luis: Pues búscalas y pónlas allí. [Then look for them and put them
- 13 there.]

(boys work and talk)

- 14 Luis: Así mira. Así. [Like this, look. Like this.]
- 15 Nelson: Aa del cielo. Del cielo. //¿Verdad del cielo?// [Ah it's part of
- 16 the sky. Of the sky. Right, part of the sky?]
- 17 Luis: //Ahora necesito la que va aquí ¿ves?// La que va aquí. [Now I
- 18 need the one that goes here, see? The one that goes here.]
- 19 Nelson: La que va allí. Esta. [The one that goes there. This one.]

- 20 Luis: Tiene que tener esquina. Esquina así. [It has to have a corner. A
21 corner like this.]
22 Nelson: (to self) Ah. Una que tenga esquina. (aloud) Ahora una que tiene
23 el palo. [Ah. One that has a corner. Now one that has the tree.]
24 Luis: Sí tiene palo. Mírala aquí. [Yes it has a tree. Look at it here.]

(boys work and talk)

- 25 Luis: Búscalas. Que están. Mira. [Look for them. They're there. Look.]
26 Robert: Look it one here.
27 Luis: Mira. Mira. [Look. Look.]
28 Robert: I know I know. Look one here.
29 Nelson: Oh yeah. This go here.
30 Robert: Hey what about this one? (unclear)
31 Luis: Oye Nelson. Chequéate si esto es de allí. [Listen Nelson. Check
32 if this is from there.]
33 Robert: Look. Let me see it. //I'll check.//
34 Nelson: //I'll check.//
35 Luis: Deja a Nelson que chequese.// [Let Nelson check it.]
36 Nelson: I'll check it.
37 Luis: Busca tú otras partes que tú sabes más. [You look for other parts
38 that you know better.]
39 Nelson: Ok. This go here....I'll check it.
40 Luis: Well check it then.

(boys work and play)

- 41 Robert: (unclear) Luis ponlo para atrás. [() Luis put it back.]
42 Nelson: Ponlo. Ponlo. [Put it. Put it.]
43 Luis: Nelson watch out.
44 Nelson: Esta es de aquí. Yo creo que esta es de aquí. Mm. Esto es blanco
45 esto es blanco. Y blanco blanco. Blanco. [This one is from here.
46 I think this one is from here. Mm. This is white this is white.
47 And white white. White.]
48 Luis: Chequéate por allí //también.// [Check around here too.]
49 Nelson: Ajá. Ya. Ya puse esta aquí. [Aha. Already. I put this here
50 already.]
51 Luis: ¿Pusiste esa? [Did you put that one?]
52 Nelson: Mjum. [Mhum.]

These four excerpts illustrate the most salient patterns in this hour long interaction. First, it is notable that Luis does not use the recitation script in this setting. Putting a puzzle together was not identified by the family as a school-related skill that requires direct teaching and teacher language. But this skill was a part of the developmental assessment given to all kindergartners. Months later, Nelson completed this part of the assessment with ease, noting that his brother had taught him how to do it.

Second, though Luis' assistance occasionally takes the form of directives, most often he shares strategies for finding and matching puzzle pieces that provide scaffolding for Nelson that allows him to participate with his brothers and learn new skills. At first, Luis suggests they look for blue pieces (lines 1-3) and corners (lines 20-21) and Nelson readily adopts these strategies (lines 8-9, 11; lines 22-23). At the same time, Nelson suggests

Luis' first strategy himself. He mentions the sky pieces but asks for confirmation in lines 15 and 16: "¿Verdad del cielo?"/"Right part of the sky?" Then, Nelson suggests a strategy himself: look for pieces with the tree (lines 22-23). Near the end, he tells everyone to look for white pieces (lines 44-47). Luis seems sensitive to Nelson's growing ability, providing less assistance and asking Nelson for information, transferring more responsibility for the activity to him.

Third, Nelson's active participation is evident throughout. His abundant use of repetition and private speech support his growing ability to work on the puzzle (lines 8-9, 11, 15-16, 22-23). As he appropriates strategies for putting a puzzle together, he becomes more confident and uses these two aspects of the script less. In the last excerpt, he confidently declares he knows where pieces go (lines 44-47, 49-50), functioning at a higher level than the one at which he began but still within the zpd that he has co-constructed with Luis.

Nelson also plays an active role in the use of English which seems associated with his play with his brothers, particularly Robert. He repeats Robert's phrases and also seems to be using phrases that he has heard elsewhere and repeats here in whole chunks (lines 29, 34, 36, 39). Like the repetition of puzzle strategies, the repetition of English appears to be evidence of Nelson's active appropriation, in this case of a second language.

Discussion

In a study of families and literacy, Leichter (1984), describes the task of "locating literacy in the stream of family activities" (p. 42). This sense of a stream of multiple and competing activities, most of which did not serve instructional purposes, was also found in Nelson's home. Teaching and learning of school-related content in sibling interactions were frequently embedded in the flow of the family's life. Aspects of the interactions at the three levels of the analysis--individual, interpersonal, and cultural--are discussed below.

First, at the level of individual development, Nelson's active role in jointly constructing zpds was amply demonstrated. In contrast to his behavior in the classroom, Nelson was active during lessons with his parents and even more so with his siblings. He asked questions and answered them, initiated topics, and ignored others' questions and directives. In some instances, responsibility for parts of a task were given to Nelson and, in others, he took responsibility away from the older sibling.

Previous research suggests that these are common patterns: learners working with child teachers are more active than those working with adults; children working with siblings are especially active (Azmitia & Hesser, 1993; Ellis & Rogoff, 1986); assisted performance is more likely to occur in families from a variety of cultures than in classrooms where teachers often restrict themselves to the assessment of children's knowledge (Rogoff, 1990; Tharp & Gallimore, 1988).

Nelson's use of private speech is an important aspect of his active role. Private or self-directed speech has been described by Vygotsky (Berk & Winsler, 1995) as a means of self-regulation used for directing one's own behavior. It is an intermediate stage between social speech and language used for thinking as a tool of the mind. When children are engaged in difficult tasks, they are more likely to use more private speech. As a consequence, private speech is evidence of their active appropriation of new knowledge and skills. The child collaborates first with others, then with him or herself.

Second, at the interpersonal level, this work suggests that the activities of the older siblings together with those of the parents formed a coordinated system of caretaking and teaching as described in the cross-cultural literature (Bryant & Litman, 1987; Watson-Gegeo & Gegeo, 1989; Weisner, 1989). The parents engaged in more formal teaching and provided many informal learning experiences. They did not play with Nelson. Complementing these activities, the older siblings provided a range of informal opportunities for learning that were embedded in play and other meaningful interactions. While the parents used the recitation script, the older siblings occasionally used parts of the script. Most often, they eliminated the evaluation turn of the IRE sequence, providing assistance without the element of assessment identified with the adult teaching role.

Within these activity settings, the older siblings often provided scaffolding for Nelson to engage in tasks that extended his knowledge and skills. Luis and Yvette's sensitive assistance helped Nelson function in ways he could not on his own. There were also instances when the older siblings used directives to tell Nelson what to do. This was another style of teaching that gave Nelson practice with school-related skills.

Several earlier studies of peers and siblings as teachers (Azmitia & Hesser, 1993; Ellis & Rogoff, 1986) provide insight into the role of the older siblings. That work suggests that children may be much less able than adults to work within a learner's zpd because they focus primarily on finishing the task and not on communicating underlying concepts or the learner's ability level. Still other work indicates that a sibling's teaching skill may be related to culture. In a study comparing sibling pairs and mother-child pairs from Mexico and the United States, Farver (1996) found that the Mexican siblings were more skillful at scaffolding pretend play than those from the U.S. and that their interactions with younger siblings resembled the interactions of the mothers from the U.S. with their children. The author argues that these findings are related to cultural patterns: the Mexican mothers did not play with their children; the Mexican siblings were very involved in caretaking.

In this study, Yvette and Luis' teaching skills may be associated with experiences of caretaking in a Latino family. It is important to note, however, that sometimes they interacted with Nelson with no apparent instructional intent. Though they had been raised to help each other, there were times when they just wanted to win the game or complete the puzzle.

These findings illustrate the usefulness of the concept of activity setting when unpacking the culture at the level of individual families. Variations in personnel, tasks, and scripts as they relate to underlying motives and values can be teased out of these complex, multi-layered settings. Further research of this kind is needed to explore other factors that appeared to have an impact on the process of sibling teaching. For example, there seemed to be differences in teaching scripts when Nelson worked on known tasks with siblings and when he worked on novel ones with them. Activity settings in which Luis participated differed in some ways from those with Yvette, confirming suggestions in the literature (Bryant & Litman, 1987; Cicirelli, 1995) that the gender of the older sibling may be relevant. Differences in the use of Spanish and English were apparent. The influence of the family's Bible study sessions also needs to be investigated. In order to move beyond cultural stereotypes, more research is needed to investigate such complexities inherent in natural settings.

Third, at the cultural level, several different scripts seem to be used in the activity settings. In the sibling lessons, the recitation script identified with many teachers in the U.S. was used in conjunction with a more directive and conversational script that has been described in research in a Puerto Rican classroom (McCollum, 1989). According to still other research (Rogoff et al., 1993), such verbal teaching styles are associated with a cultural pattern common in urban middle-class homes in which adults see themselves as responsible for teaching and, thus, teach their children directly through verbal interactions and play. In Nelson's home, parents and siblings used this approach to directly teach lessons with school-related content, though only siblings did so in the context of play.

This cultural pattern is contrasted with one common in rural non-middle class cultures in which children learn by participating and observing in family activities. Children take responsibility for their own learning. Parents provide assistance to children, but they rarely teach them directly or play with them. This approach is similar to the one used in activity settings in Nelson's home in which sibling guidance occurred. In that home, it was the siblings who provided indirect instruction as they participated in activities together with Nelson.

This syncretism of cultural styles is discussed by Duranti and Ochs (in press) in their study of literacy in the homes of Samoan families living in California. Defining syncretic literacy as "an intermingling or merging of culturally diverse traditions [that] informs and organizes literacy activities" (p.2), they extend the term beyond its usual reference to language to "include hybrid cultural constructions of speech acts and speech activities" (p. 2). Thus, rather than embodying a single, "traditional" style, the activity settings constructed by Nelson and his older siblings represent a comingling of resources from Puerto Rican culture, from the culture of the United States, from schools in both contexts, and from the family's religion. A perspective that recognizes the syncretism of cultures within one home contrasts with the deficit perspective that highlights what families lack as well as the more recent diversity perspective that emphasizes the cultural discontinuities between homes and schools. While critical discontinuities do exist, it is important to recognize that homes such as Nelson's are a rich and complex source of learning for children. Nelson learned through his collaboration with his parents, with his siblings, and even with himself.

Notes

1. Pseudonyms were used for all participants and for the school.

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Table 1
Activity Settings for Sibling Teaching

<u>task</u>	<u>personnel</u>	<u>school content</u>	<u>duration</u>
1) play Connect 4	Nelson, Yvette, Robert	colors, numbers, strategic thinking, patterns	23 min.
2) complete puzzle	Nelson, Luis, Robert	puzzle strategies	60 min.
3) play Connect 4	Nelson, Yvette, Robert	colors, numbers, strategic thinking	30 min.
4) play w/ stickers	Nelson, Yvette, Robert	same/different, writing name, ordinal numbers	12 min.
5) coloring	family	colors, days	15 min.
6) play Connect 4	Nelson, Nati, Sra M, Yvette, Robert	colors, numbers, strategic thinking	8 min.
7) play w/ baseball cards	Nelson, Nati, Robert	reading, classifying	4 min.
8) talking	Nelson, Nati	animal care, birthdays, ages, numbers	3 min.
9) talking	Nelson, Zulma, Yvette, Sr & Sra M	addresses, writing, addition/counting, reading animals, drawing, families	100 min.
10) play Connect 4	Nelson, Luis, Robert	colors, strategic thinking	19 min.
11) play w/ baseball cards	Nelson, Yvette, Robert	reading, classifying,	7 min.
12) play Chinese checkers	Nelson, Yvette, Robert	colors, strategic thinking	13 min.
13) play dot-to-dot	Nelson, Yvette, Robert, Sra M	numbers, strategic thinking	20 min.
14) talking	Nelson, Yvette, Robert, Sra M	family relationships	2 min.
15) play tictactoe	Nelson, Yvette, Robert, Sra M	strategic thinking	2 min.